

BRAUERIA (Lunz am See, Austria) 35:21-22 (2008)

The occurrence of *Micrasema setiferum* (Pictet 1834) in Britain.

M.T.GREENWOOD

This note is to supplement the data presented by GREEN et al (2006), following an extensive multidisciplinary study of, what are considered to be fluvial deposits from a short time interval within a late Middle Pleistocene interglacial (Marine Isotope Stage 9). From the organic sands and silts at Hackney, north London, the plant, mollusc and insect (Coleoptera) assemblages, all suggest a climate more continental than that found in southern Britain today.

In the course of preparing material for the above paper, Professor G.R.Coope, having concentrated on fossil Coleoptera, also collected frontoclypeal, pronotal and mesonotal fragments of larval Trichoptera, sending these to the present author for comment. Nine samples were prepared from bulk samples 1-9 (see Fig.3 in GREEN & al. 2006). The similarity of all the coleopteran assemblages in samples 1-9, suggests that the local environment remained unchanged throughout the period of record, a similar conclusion being drawn from the trichopteran taxa (see Table 1.). Dating of the organic material, from which this insect material was extracted, was also undertaken by Optically Stimulated Luminescence (OSL) and found to be ca 328 ky BP. Using the notation for designating glacial and interglacial episodes in the British Isles, this interglacial falls within the late Hoxnian*.

Most prevalent were *Hydropsyche pellucidula* (CURTIS), *H. contubernalis* MCLACHLAN and *Cheumatopsyche lepida* (Pictet), together with small numbers of *Lepidostoma hirtum* (FABRICIUS), *Sericostoma personatum* (SPENCE), *Athripsodes cf albifrons/bilineatus*, small fragments of unknown Limnephilidae and a frontoclypeal apotome of *Micrasema setiferum* (Pictet) (see the figure). All taxa are extant in Britain with the exception of *Micrasema setiferum* and represent an assemblage, typical of habitats in the main artery of a large river. This interpretation is also supported by the presence of large numbers of dryopid (helminthid), coleopteran species, indicative of running water.

Table 1.
The distribution of larval sclerites from samples 1-9, Hackney, north London, UK.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------------------------|---|---|---|-------|----|----|---|----|----|
| Hydropsychidae | | | | | | | | | |
| Hydropsyche pellucidula | | | 1 | 4 | 3 | 13 | 4 | 16 | 21 |
| Hydropsyche contubernalis | | 5 | 2 | 36 | 15 | 54 | 7 | 29 | 49 |
| Cheumatopsyche lepida | | 1 | | 16 | 5 | 44 | 3 | 23 | 51 |
| Brachycentridae | | | | | | | | | |
| * <i>Micrasema setiferum</i> | | | | | | 1 | | | |
| Lepidostomatidae | | | | | | | | | |
| Lepidostoma hirtum | | | | 1 | | 1 | | | 1 |
| Limnephilidae | | | | frag. | | | | | |
| Sericostomatidae | | | | | | | | | |
| Sericostoma personatum | | | | 1 | 3 | 1 | | | 1 |
| Leptoceridae | | | | | | | | | |
| Athripsodes cf albifrons/bilineatus | | | | | | | | | 1 |

VERNEAUX (1972) describes the ecology of this species in the Jura Mountains where the larvae, often occurring in large numbers, colonise mosses in flows of +/- 20-70 cm/sec and at water depths of 25-60 cm. In the River Doubs, where much of this study was undertaken, the water temperature ranged from 1.4-21.6 °C, an annual range of 20.2 °C.

The present distribution of *Micrasema setiferum* is shown in GREENWOOD et al (2003). In this paper, the present geographical distribution has been converted into climate space, this being described by plotting the mean temperature of the warmest month (T_{max}) against the difference between the mean temperature of the coldest month and that of the warmest month, usually July and January, in °C (T_{range}). Using this procedure, the conditions tolerated by *M. setiferum* fall within a climate envelope of greater continentality, than exists in the Trent valley today.

The significance of this find in MIS9 is that it is the oldest record of this species in Britain and of only the third known locality. GREENWOOD et al (2003), record *Micrasema setiferum* from Late-glacial deposits from the middle reaches of the River Trent, dated ca. 11.600 ¹⁴C yr BP (Barrow-upon-Trent) and a further site in the same region (Hemington) has also yielded another record of this species (unpublished).

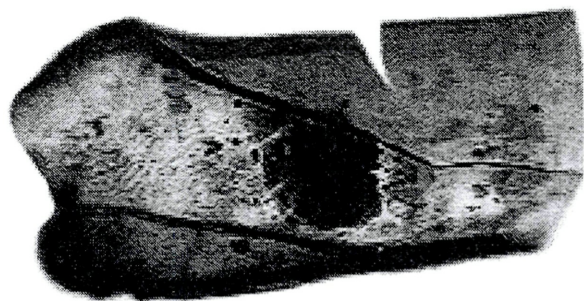
References

GREEN CP, BRANCH NP, COOPE GR, FIELD MH, KEEN DH, WELLS JM, SCHWENNINGER J-L, PREECE RC, SCHREVE DC, CANTI MG, GLEED-OWEN CP. 2006. Marine Isotope Stage 9 environments of fluvial deposits at Hackney, north London, UK. Quaternary Science Reviews 25: 89-113.

GREENWOOD MT, AGNEW MD, WOOD PJ. 2003. The use of caddisfly fauna (Insecta: Trichoptera) to characterise the Late-glacial River Trent, England. Journal of Quaternary Science 187:645-661.

VERNEAUX J. 1972 La larve de *Micrasema setiferum* Pictet (Trichoptere Brachycentridae) Description et Donnees Ecologiques. Annales de Limnologie 8:49-62.

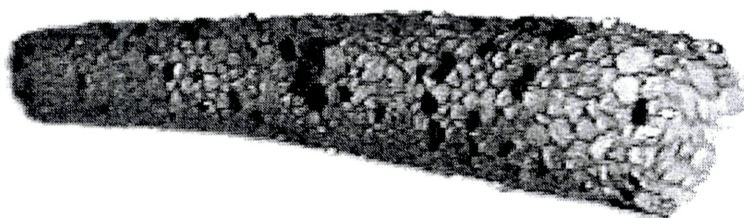
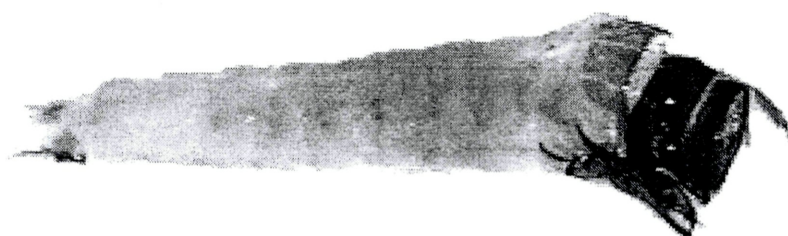
* Hoxnian is, according to the terminology used for the British Isles, a period about 340.000-300.000 years before present, roughly corresponding with Holstein interglacial, or between Mindel and Riss, or Pre-Illinoian according to other terminology.



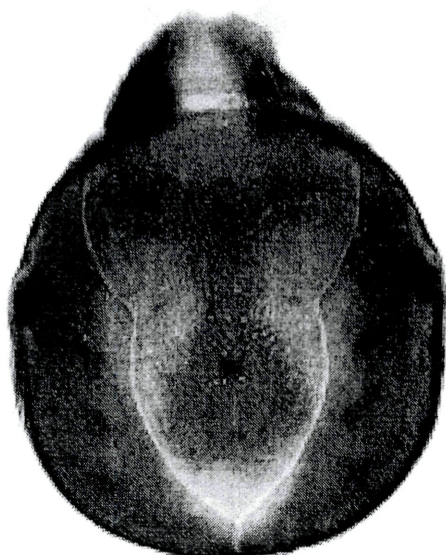
left thoracic sclerite (fossil)



frontoclypeal apotome (fossil)



The larva and case, together with a view of the head, showing the patterned frontoclypeal apotome (specimens from Finland)



frontoclypeal apotome (fossil)